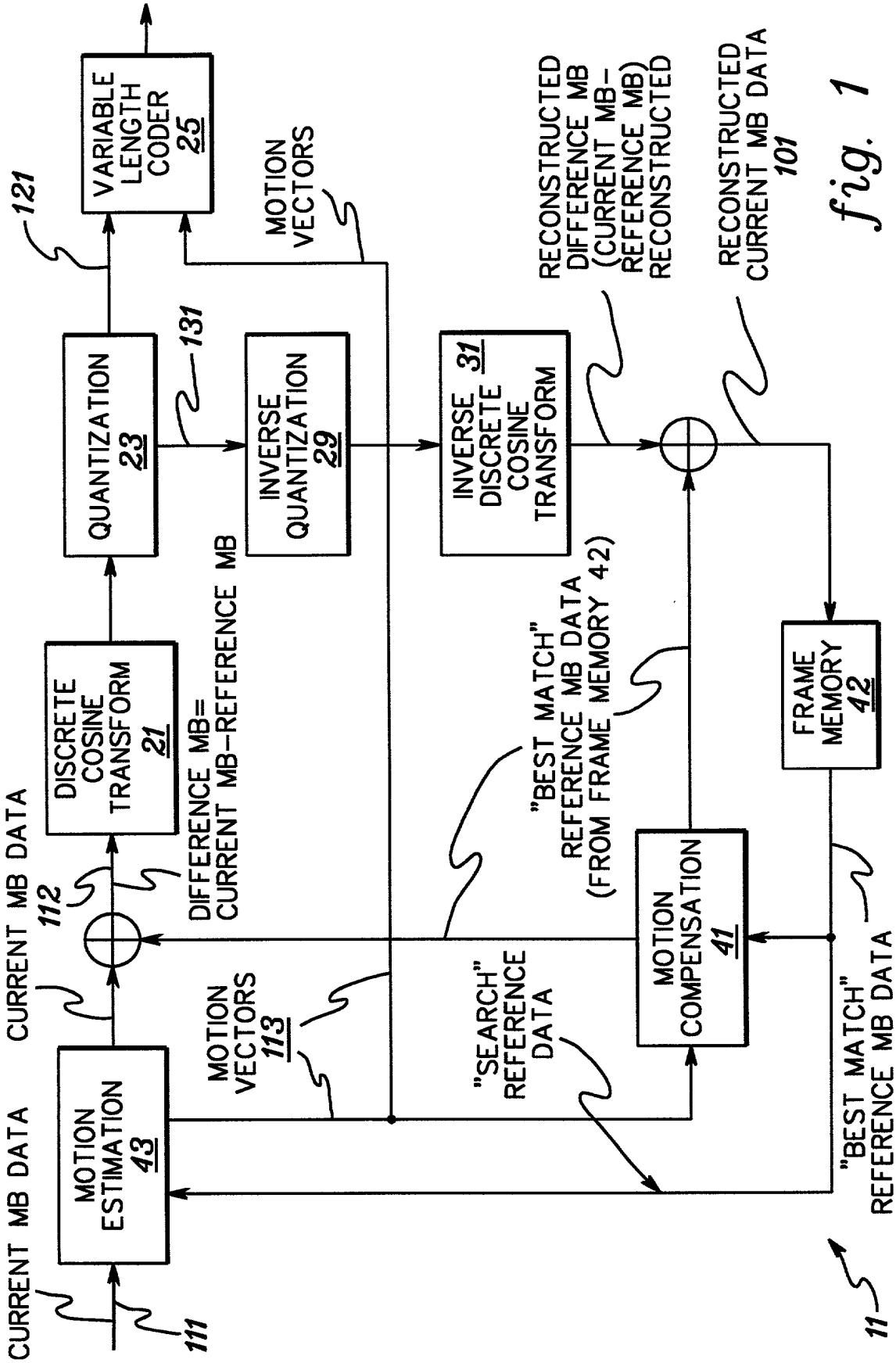

CURRENT MB DATA
111
MOTION ESTIMATION 43
CURRENT MB DATA
112
DISCRETE COSINE TRANSFORM 21
121
QUANTIZATION 23
VARIABLE LENGTH CODER 25
MOTION VECTORS
131
INVERSE QUANTIZATION 29
INVERSE 31 DISCRETE COSINE TRANSFORM
DIFFERENCE MB= CURRENT MB-REFERENCE MB
MOTION VECTORS 113
"SEARCH" REFERENCE DATA
"BEST MATCH" REFERENCE MB DATA (FROM FRAME MEMORY 42)
MOTION COMPENSATION 41
RECONSTRUCTED DIFFERENCE MB (CURRENT MB-REFERENCE MB) RECONSTRUCTED
RECONSTRUCTED CURRENT MB DATA 101
FRAME MEMORY 42
"BEST MATCH" REFERENCE MB DATA
11

fig. 1

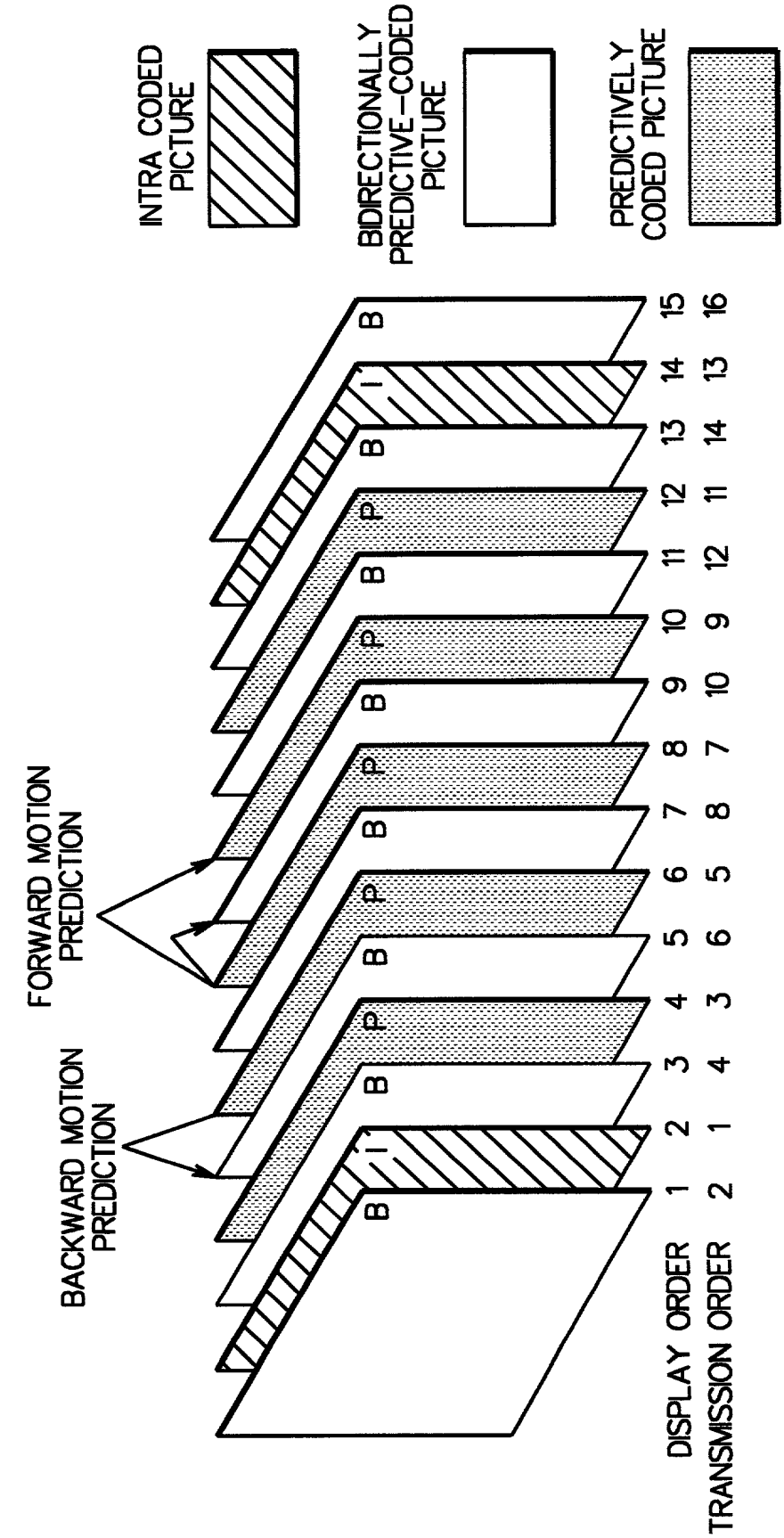

INTRA CODED PICTURE
BIDIRECTIONALLY PREDICTIVE-CODED PICTURE
PREDICTIVELY CODED PICTURE
FORWARD MOTION PREDICTION
BACKWARD MOTION PREDICTION
DISPLAY ORDER
TRANSMISSION ORDER
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
2 1 4 3 6 5 8 7 10 9 12 11 14 13 16 15
I B B P B B P B B P B B I B B

fig. 2

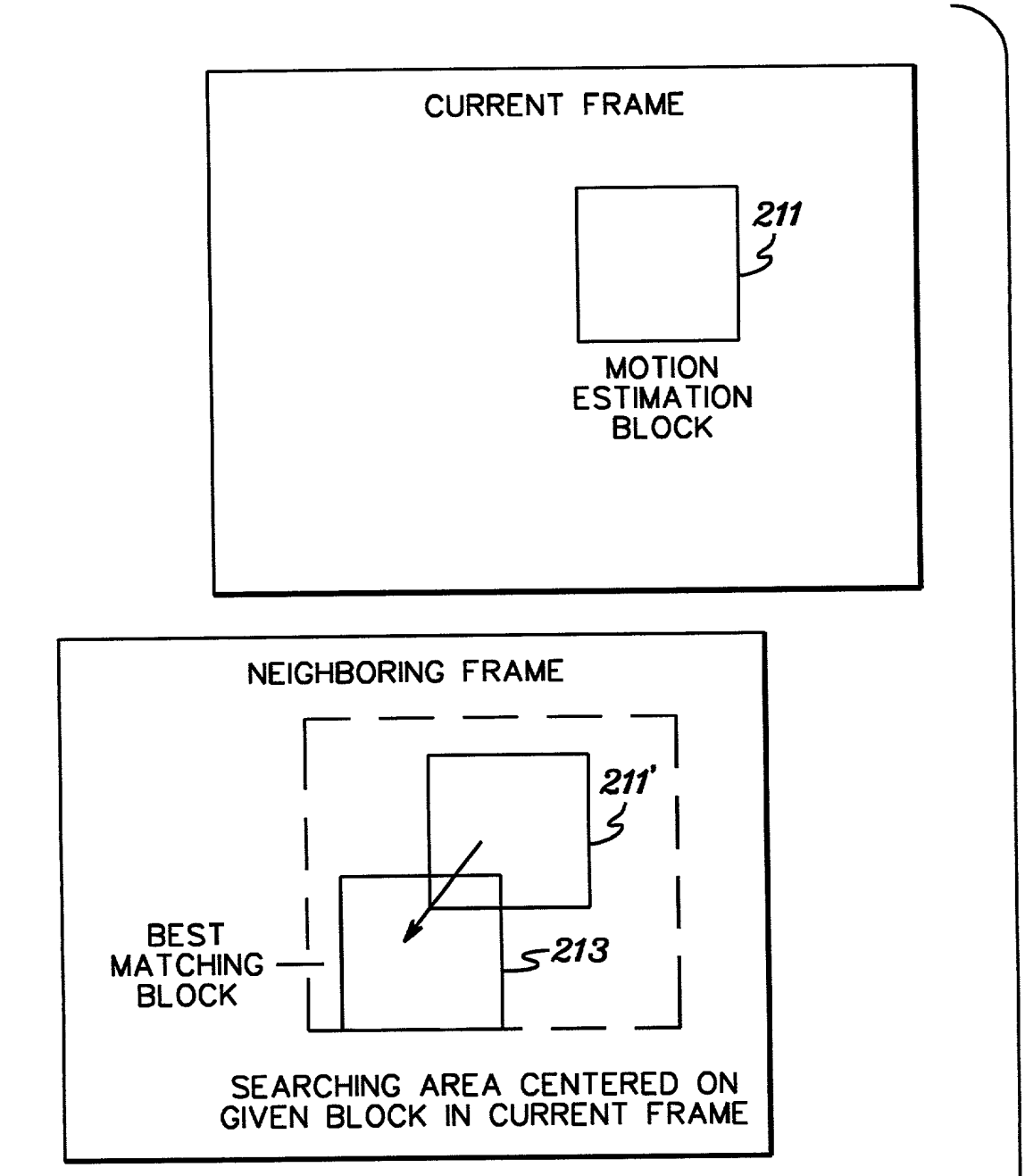
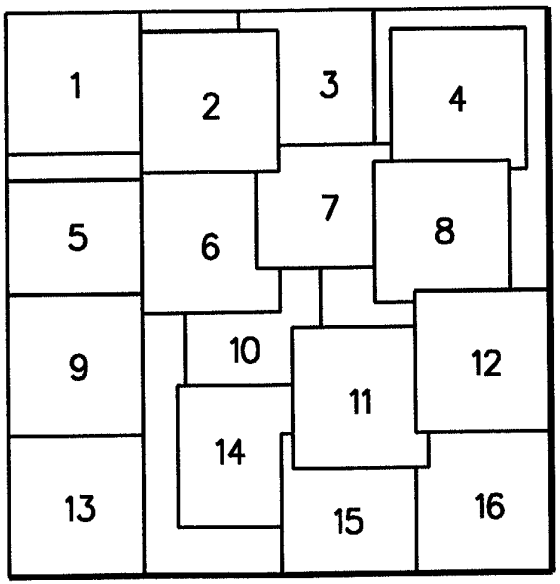
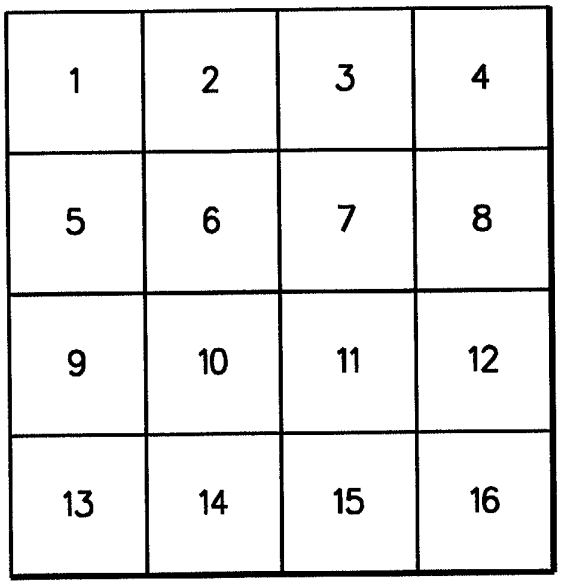

CURRENT FRAME
211
MOTION ESTIMATION BLOCK
NEIGHBORING FRAME
211'
213
BEST MATCHING BLOCK
SEARCHING AREA CENTERED ON GIVEN BLOCK IN CURRENT FRAME

fig. 3



BLOCKS OF PREVIOUS PICTURE
USED TO PREDICT CURRENT PICTURE



CURRENT PICTURE AFTER USING
MOTION VECTORS TO ADJUST
PREVIOUS PICTURE BLOCK POSITIONS

fig. 4

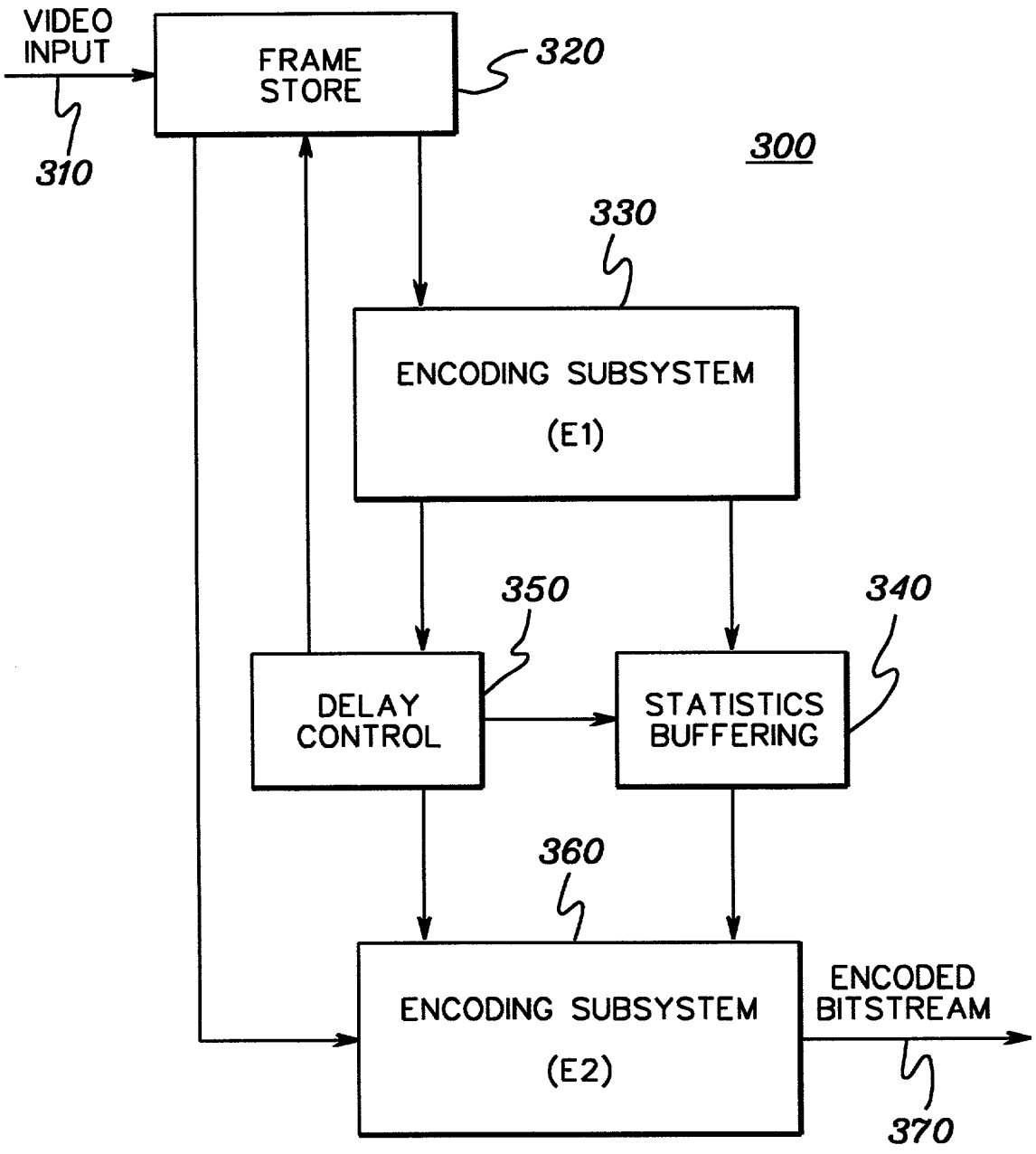

VIDEO INPUT
310
FRAME STORE
320
300
330
ENCODING SUBSYSTEM (E1)
350
340
DELAY CONTROL
STATISTICS BUFFERING
360
ENCODING SUBSYSTEM (E2)
ENCODED BITSTREAM
370

fig. 5

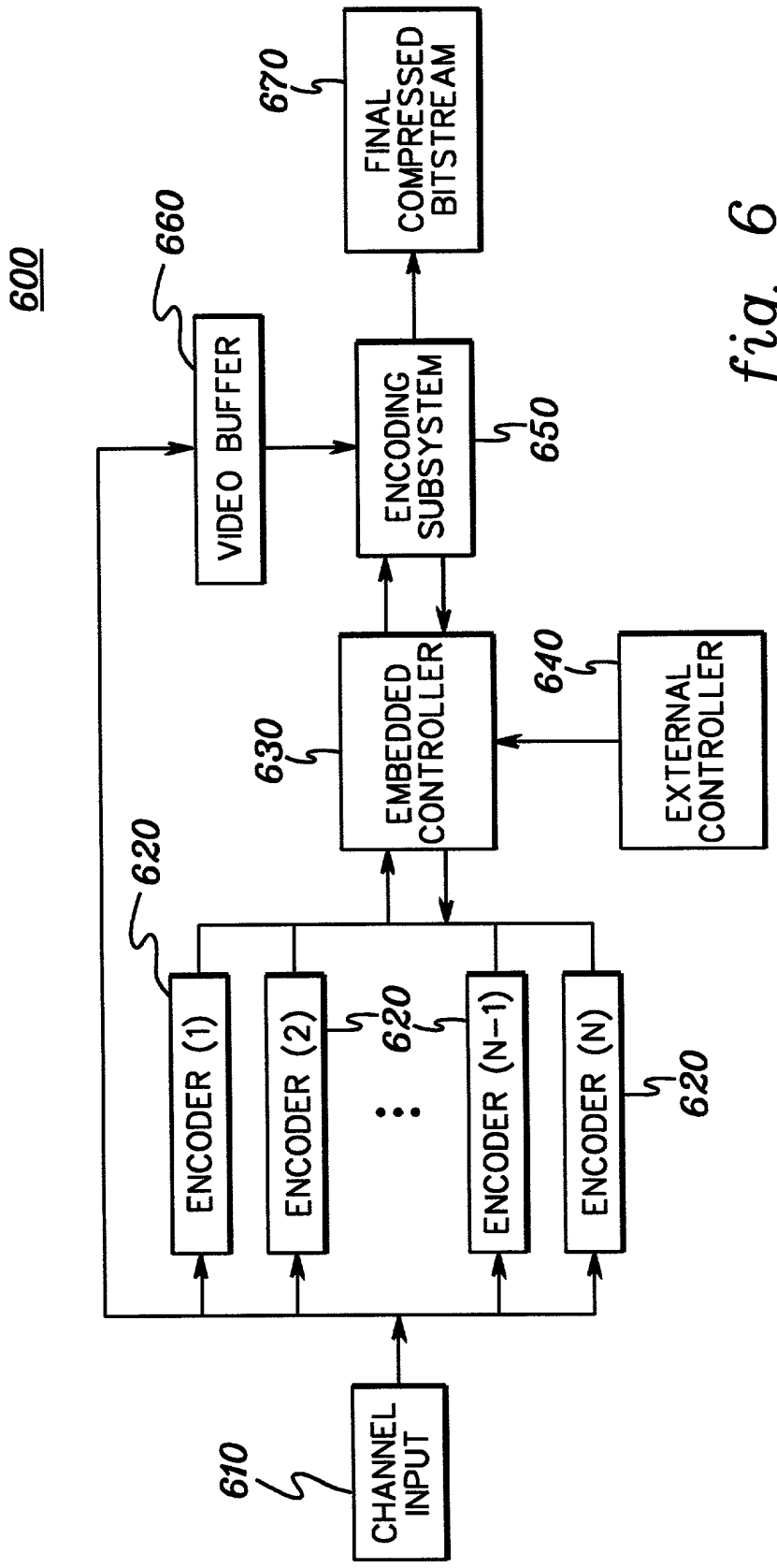

600
610
CHANNEL INPUT
620
ENCODER (1)
ENCODER (2)
620
ENCODER (N-1)
ENCODER (N)
620
630
EMBEDDED CONTROLLER
640
EXTERNAL CONTROLLER
650
ENCODING SUBSYSTEM
660
VIDEO BUFFER
670
FINAL COMPRESSED BITSTREAM

fig. 6

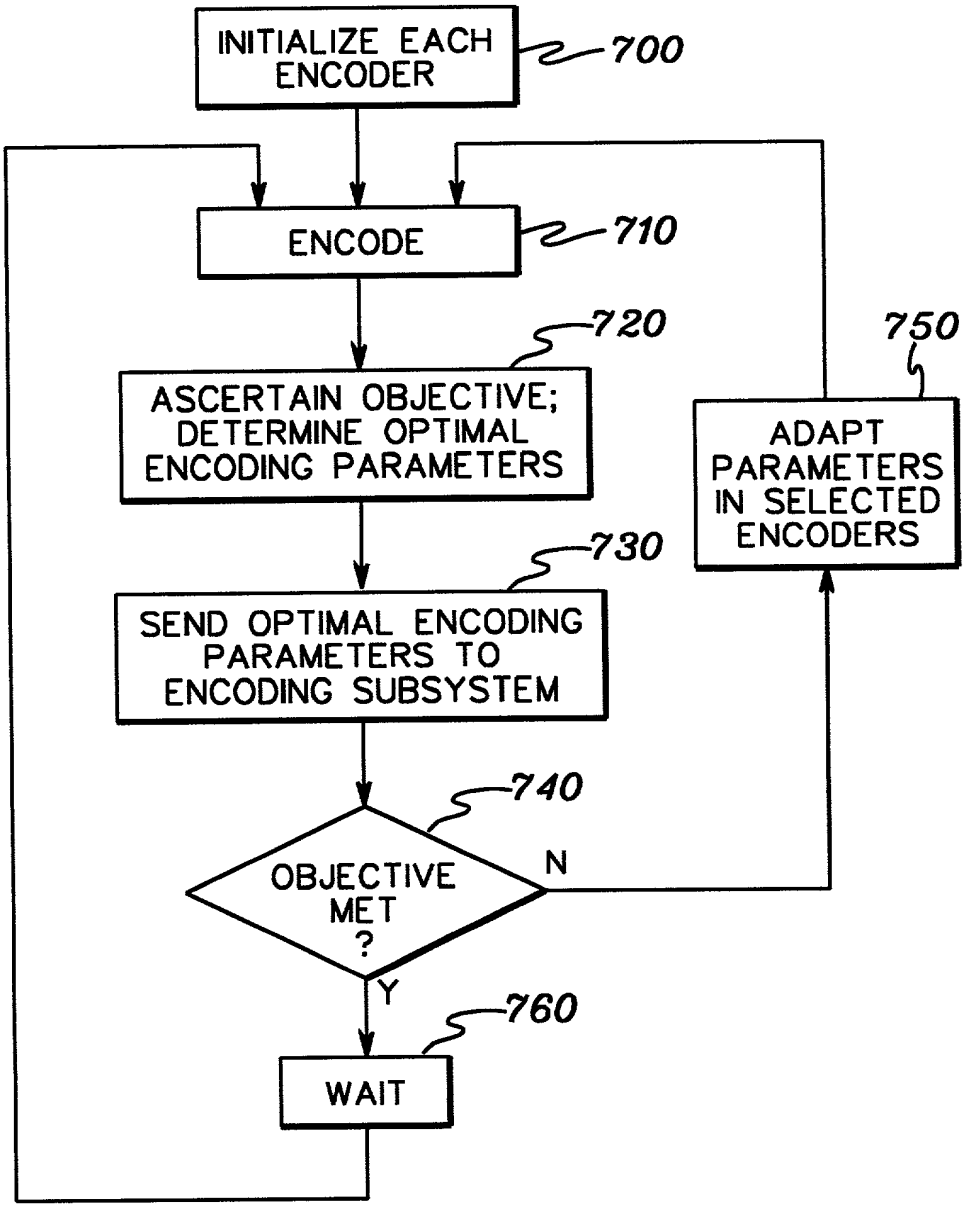

INITIALIZE EACH ENCODER
700
ENCODE
710
ASCERTAIN OBJECTIVE; DETERMINE OPTIMAL ENCODING PARAMETERS
720
SEND OPTIMAL ENCODING PARAMETERS TO ENCODING SUBSYSTEM
730
OBJECTIVE MET ?
740
N
Y
WAIT
760
ADAPT PARAMETERS IN SELECTED ENCODERS
750

fig. 7

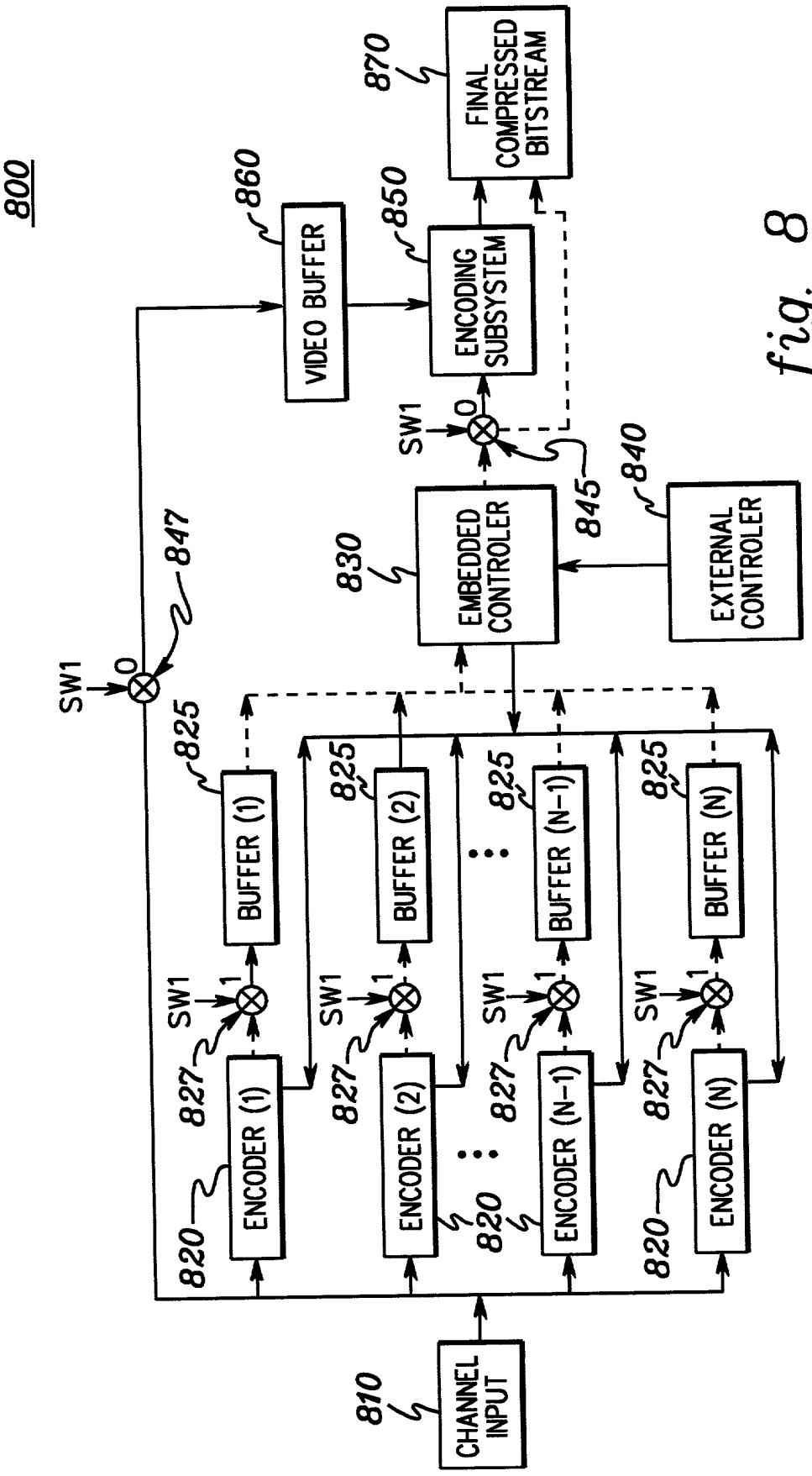

800
810
CHANNEL INPUT
820
ENCODER (1)
ENCODER (2)
ENCODER (N-1)
ENCODER (N)
825
BUFFER (1)
BUFFER (2)
BUFFER (N-1)
BUFFER (N)
827
SW1
0
1
830
EMBEDDED CONTROLER
840
EXTERNAL CONTROLER
845
847
850
ENCODING SUBSYSTEM
860
VIDEO BUFFER
870
FINAL COMPRESSED BITSTREAM

fig. 8